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FROM :PNNL MATERIALS PSL 1108

FAX NO. :509-375-2186

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**PATENT APPLICATION**  
Docket No. 1941-76

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Jun LIU; Karel DOMANSKY; Xiohong LI; Glen E. FRYXELL; Suresh BASKARAN; Nathan J. KOHLER; and Suntharampillai THEVUTHASAN

Serial No. 09/837,885 Examiner: Chang, Victor S.

Filed: April 18, 2001 Group Art Unit: 1771

For: MESOPOROUS SILICA FILM FROM A SOLUTION CONTAINING A SURFACTANT AND METHODS OF MAKING SAME

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER RULE 37 C.F.R. 1.132**

I, Suresh Baskaran, declare the following:

1. I am employed at Battelle Pacific Northwest Labs in Richland, WA, assignee of the current patent application.
2. I am one of the inventors of the invention disclosed in the instant patent application.

3. I have read and understood U.S. Patent Application Serial No. 09/837,885, as recently amended by applicants. I also have read and understood the United States Patent and Trademark Office's Final Office action mailed from the on September 8, 2003 and the Advisory action mailed October 25, 2003. Finally, I have read and understood applicants' Amendment and Remarks mailed November 10, 2003.

4. In the Advisory Action, dated November 25, 2003, the Examiner indicated that evidence was needed to support Applicants' allegations that the use of a dehydroxylation step was not obvious over the prior art mentioned by examiner, i.e. Brinker, et al. As disclosed in

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the specification of the current patent application, hexamethyldisilazane (HMDS) is used to perform dehydroxylation of thin films. Attached to this affidavit are several exhibits that show experimental data obtained prior to October 4, 1999, the filing of the parent patent application of this patent application, demonstrating that dehydroxylation provides a thin film with a stable dielectric constant in ambient, humid conditions, as the term 'stable' is defined in Applicants' specification on page 1.

Exhibit A shows a measurement of dielectric constant of two films. The first film was only treated with 2% hydrogen, and the dielectric constant changes from a value of less than 3 to a dielectric constant of over 9 as the humidity increased. In contrast, the film treated with HMDS as a dehydroxylation step remained stable.

Exhibits B, C and D show the stability of the dielectric constants of films that have not undergone dehydroxylation compared to films that have undergone dehydroxylation. As can be seen in these graphs, the films that have undergone dehydroxylation remain stable, while those films that have not undergone dehydroxylation do not remain stable. This evidence is supplied in support of the assertion that dehydroxylation, not shown or mentioned in Brinker, et al., results in highly stable films, and is thus non-obvious over Brinker, et al.

I, the undersigned, declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

DATED this 29<sup>th</sup> day of January, 2004.

  
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Suresh Baskaran